GRANDSTAND HAWK

OWNER'S MANUAL



4WATT 40 CHANNELS
CITIZEN'S BAND
MOBILE TRANSCEIVER

SECTION 1
GENERAL INFORMATION

DESCRIPTION

The Grandstand Hawk is the most up to date CB Transceiver available for your enjoyment. It operates on all the 40 channels availat e in the 27MHz FM system.

Your Hawk Transceiver features a frequency synthesized circuit with PHASE LOCK LOOP to ensure precise frequency control.

SPECIFICATIONS

GENERAL

Channels	: 40
Frequency range	: 27.601 25MHz. to 27.991 25MHz
Frequency control	: PLL Synthesized
Antenna impedance	: 50 ohm
Power supply	: 13.2 VDC Nominal
Accessories	: detachable dynamic microphone, microphone hanger
Dimension	: 180 (W) X 200 (D) X 60 (H) mm
Net weight	: grm.

TRANSMITTER

Output power	: Max. 4 watts
Modulation type	: FM
Modulation percentage	: Max. ±2.5 KHz deviation
Frequency tolerance	: 0.002%

RECEIVER

Sensitivity at 12dB SINAD	: 0.2uV
Squelch threshold	: Less than 0.1uV
Squelch deepest set	: ±6dB
"S"meter S-9	: 50uV
Maximum AF output power	2 watts
Selectivity (2 signal)	: −50dB at ±10 KHz
Speaker impedance	: 8 ohm

INTRODUCTION

This Transceiver has been designed to provide high level performance in the UK Citizen's Radio Service, which is comprised of the following frequency allocations :

Channel	Channel Frequency in MHz	Channel	Channel Frequency in MHz
1	27.60125	21	27.80125
2	27.61125	22	27.81125
3	27.62125	23	27.82125
4	27.63125	24	27.83125
5	27.64125	25	27.84125
6	27.65125	26	27.85125
7	27.66125	27	27.86125
8	27.67125	28	27.87125
9	27.68125	29	27.88125
10	27.69125	30	27.89125
11	27.70125	31	27.90125
12	27.71125	32	27.91125
13	27.72125	33	27.92125
14	27.73125	34	27.93125
15	27.74125	35	27.94125
16	27.75125	36	27.95125
17	27.76125	37	27.96125
18	27.77125	38	27.97125
19	27.78125	39	27.98125
20	27.79125	40	27.99125

TO INSURE THAT YOU REALIZE THE MAXIMUM PERFORMANCE FROM THIS TRANSCEIVER, PLEASE READ THIS OWNERS' MANUAL CAREFULLY.

SECTION 2
INSTALLATION

MOBILE STATION ANTENNA

Since the maximum allowable power output of the transmitter is limited by the Performance Specification MPT 1320, the antenna is a very important factor affecting transmission distance. It is for this reason that we strongly recommend that you install a quality antenna in your citizen's band system. You have just purchased a superior transceiver. Do not reduce its performance by installing an inferior antenna system.

Only a proper matched antenna system will allow maximum power transfer from the 50 ohm coaxial cable to the radiating element. Your supplier will assist you in the selection of the proper antenna to meet your requirements.

ANTENNA CABLE

To connect an antenna to the unit, a 50 ohm coaxial cable is required. Most CB antennas are pre-tuned at the factory and designed for 50 ohm cable. The recommended coaxial type cable is RG-58/U if the length required is 10 metres or less. For cable lengths over 10 metres, RG-8/U is recommended. The coaxial cable must be terminated in a PL-259 type connector at the transceiver.

CONNECTING THE POWER SUPPLY

NOTE : FIRST DISCONNECT THE BATTERY FROM VEHICLE BY DISCONNECTING THE EARTH LEAD.

When connecting to a vehicle with NEGATIVE (−) EARTH the BLACK lead should be connected to a good earth point on the vehicle body.

Connect the RED lead to a suitable live POSITIVE Terminal.

When connecting to a vehicle with POSITIVE (+)EARTH the RED lead should be connected to a good earth point on the vehicle body.

Connect the BLACK lead to a suitable live NEGATIVE Terminal.

DO NOT FORGET TO RECONNECT THE BATTERY. PLEASE ENSURE THAT THE ANTENNA IS CONNECTED TO THE UNIT BEFORE SWITCHING ON.

IF YOU HAVE ANY DOUBTS ABOUT CONNECTING YOUR UNIT TO YOUR VEHICLE'S ELECTRICAL SUPPLY, PLEASE CONSULT YOUR SUPPLIER OR QUALIFIED FITTER.

POSITIVE EARTH SYSTEM

If your vehicle has a POSITIVE earth system, connect black DC power cable from the transceiver to the negative (−).

MOBILE STATION INSTALLATION

Plan the location of the transceiver and microphone hanger before starting the installation. Select a location that is convenient for operation and does not interfere with the controls in the vehicle. The Transceiver should be securely fastened to a solid bulkhead, using the mounting bracket and bolts which are provided.

INSTALLATION AND ADJUSTMENT

CAUTION

THE TRANSMITTER VOLTAGE STANDING WAVE RATIO (VSWR) MEASUREMENT MUST BE PERFORMED PRIOR TO THE USE OF THE TRANSMITTER. A VSWR (or SWR) RATIO IN EXCESS OF 2 : 1 MAY DAMAGE THE TRANSMITTER. The RF (Radio Frequency) output circuit of the transmitter has been adjusted at the factory to operate in any 50 ohm antenna system. Therefore, you do not have to tune the Transceiver. However, you may have to adjust your antenna to obtain the lowest possible Standing Wave Ratio. The lowest SWR means that the antenna is operating at maximum efficiency. The ideal is 1 : 1. ((SWR of 1.5 : 1 or less is highly recommended.))

The recommended method of antenna tuning is to use an in-line watt-meter or VSWR meter to adjust the antenna for minimum reflected power on channel 20.

BASE STATION OPERATION

Your Grandstand Hawk can be used as a base station by employing an external power supply which converts AC power to DC. The power supply must be rated at 12 VDC and minimum 2 amperes current drain. The supply must be a good quality stabilised unit. A normal battery charger cannot beused as this may cause damage to the Transceiver.

The Transceiver may be used with any type of 50 ohm station antenna. A ground plane vertical antenna will provide the most uniform coverage . Antenna height is an important factor when maximum range is desired. Keep the antenna clear of surrounding structures or foliage. Please refer to the Performance Specification MPT 1320 with regard to antenna height limitations.

For base station operation, simply connect the red positive (+) and black negative (−) power cords of the radio to the corresponding terminals of the AC power supply.

Connect the antenna to the rear panel connector and perform the VSWR measurements as explained.

NOTE : DO NOT CONNECT THE TRANSCEIVER DIRECTLY TO 240 VOLTS AC MAINS.

SECTION 3
OPERATING INSTRUCTIONS

CONTROLS, INDICATORS, CONNECTORS AND FUNCTIONS

FIG No.1 FRONT VIEW WITH EXPLANATIONS

Front View

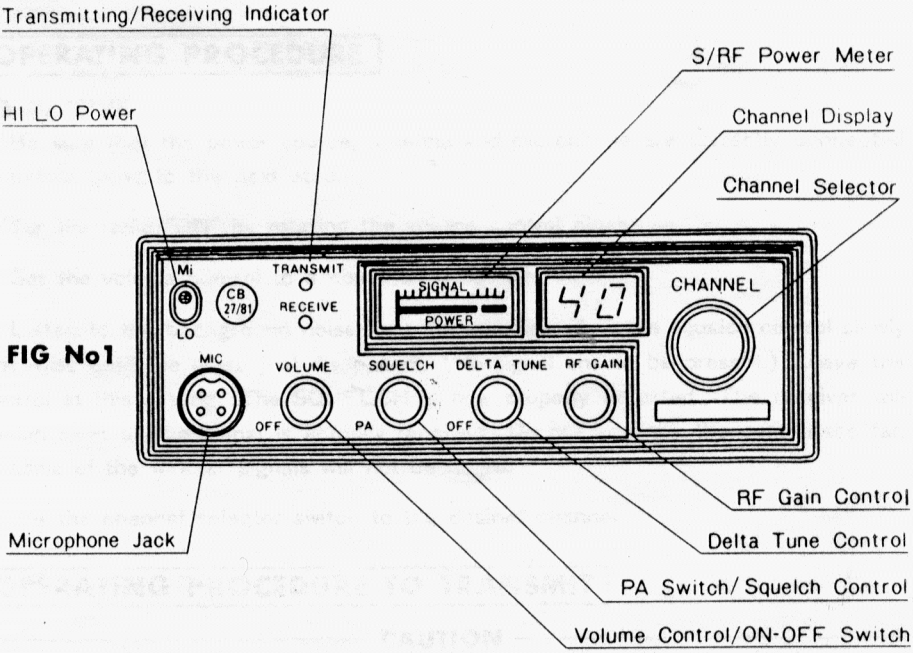


FIG No1

FUNCTIONS

(FRONT PANEL)

1.ON/OFF VOLUME : Turn clockwise to switch on the Transceiver and to set the desired listening level. Turn fully anti-clockwise to turn the Transceiver off.

2.SQUELCH : This control is used to cut off or eliminate receiver background noise in the absence of incoming signals. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background noise or ambient background noise is eliminated. Turn the control fully anti-clockwise, then slowly rotate clockwise until the receiver noise disappears. Any signal to be received must now be alightly stronger that the average received noise.

3.DELTA TUNE : This control fine tunes the reception of the selected channel.

4.RF GAIN : This control effects the strength of the incoming signal. Turn this control fully clockwise at the start of operation. If signal is too strong and distorted turn anti-clockwise to desired level.

5.HI/LO SWITCH : This control allows an attenuation of 10dB's of transmitted power. (Refer to your licence conditions.)

6.CHANNEL SELECTOR SWITCH : This switch selects the desired channel for transmission and reception.

7.CHANNEL INDICATOR : Light Emitting Diode (LED) indicates the channel number in use.

8.RF POWER/"S" METER : This meter shows the RF power when transmitting and the strength of the incoming signal when receiving. The RF power is indicated in red LEDs, and the signal strength is indicated in green LEDs calibrated for 50 uV at S-9.

9.PRESS-TO-TALK-MICROPHONE : The receiver and transmitter are controlled by the press-to-talk-switch on the microphone. Press the switch to activate the transmitter; release the switch to receive. When transmitting, hold the microphone 5 CM from the mouth and speak clearly in a normal voice. When transmitting a red RED will light up. When receiving a green LED will light up. The microphone provided with your radio is a detachable low impedance dynamic type.

Rear View

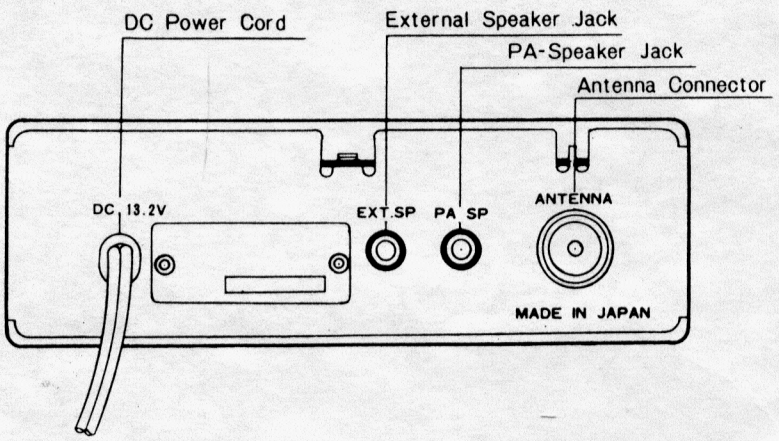


FIG No.2

(REAR PANEL) FIG No2

1.EXTERNAL SPEAKER : The external speaker jack enables you to use an extra loudspeaker. The external speaker should have 8 ohm impedance and be rated to handle at least 2 watts. The connector to be used for this external speaker should be a miniature jack plug, which will work as follows:—

(A) For both built-in and external speakers

2.ANTENNA CONNECTOR : ANT 50 OHM. This female connector permits connection of the coaxial cable male connector (PL-259) to the transceiver.

OPERATING PROCEDURE

TO RECEIVE

1. Be sure that the power source, antenna and microphone are correctly connected before going to the next step.

2. Tur the radio "ON" by rotating the volume control clockwise.

3. Set the volume control to a comfortable listening level.

4. Listen to the background noise from the speaker . Turn the squelch control slowly clockwise until the noise just disappears. (No signal should be present.) Leave the control at this setting. The SQUELCH is now properly adjusted. The receiver will remain quiet until a signal is actually received. Do not advance the control too far, or some of the weaker signals will not be heard.

5. Set the channel selector switch to the desired channel.

OPERATING PROCEDURE TO TRANSMIT

CAUTION

Be sure the antenna is properly connected to the transceiver before transmitting. Transmitting without an antenna or poorly matched antenna (high SWR over 2) can cause damage to the transmitter.

1. Select the desired channel.
2. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal voice.

PREVENTIVE MAINTENANCE

At regular intervals, the following checks shold be made :

1. Check Standing Wave Ratio (SWR)
2. Inspect all electrical connections to ensure that they are tight.

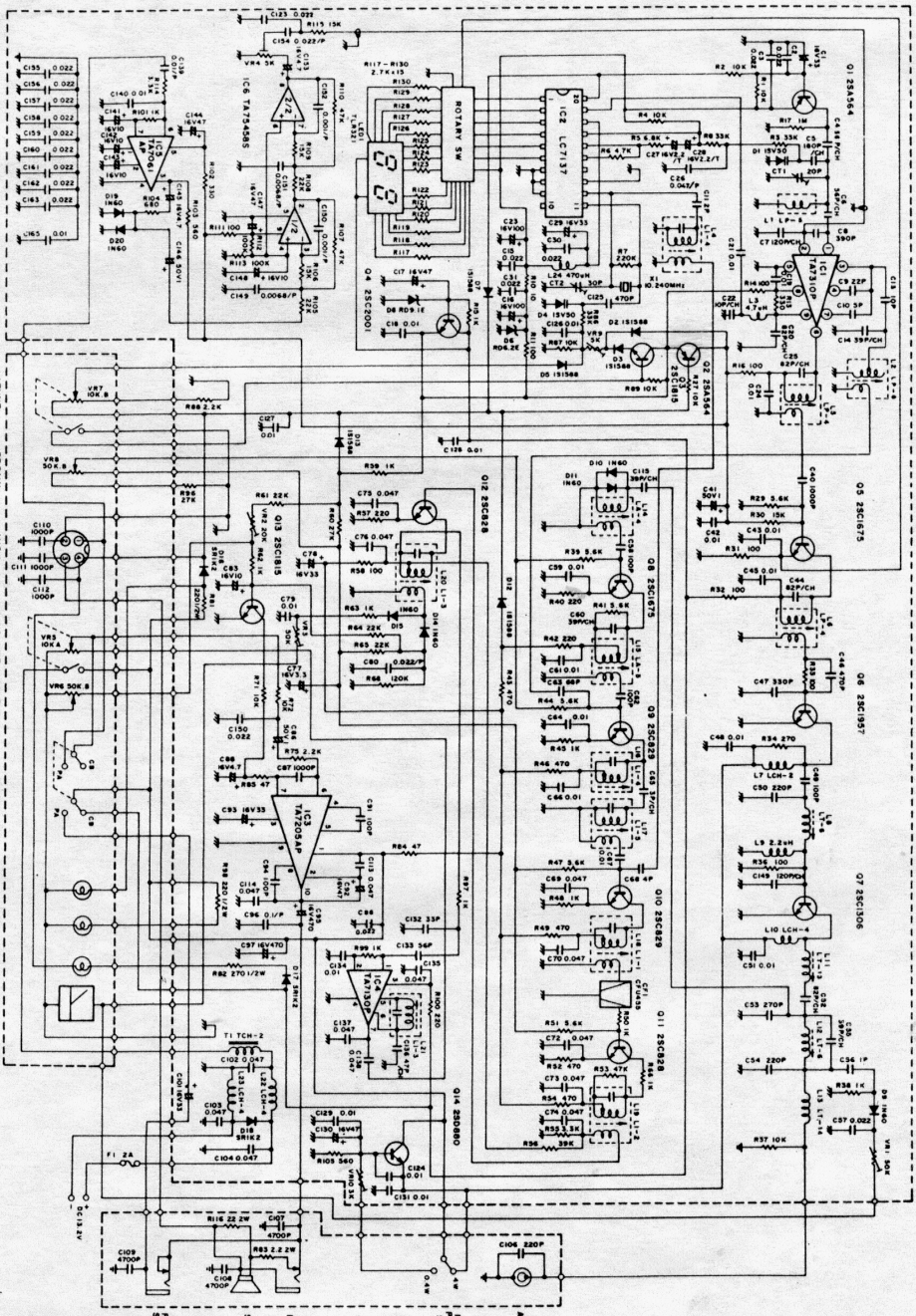
3. Inspect antenna coaxial cable for wear or breaks on shielding.
4. Ensure that all mounting screws are tight.

OPERATOR TROUBLE-SHOOT

1. If the Transceiver is completely inoperative.
   ※Check the power supply lead and fuse.
2. If trouble is experienced with receiving.
   ※Check ON/OFF VOLUME CONTROL setting.
   ※Be sure SQUELCH is adjusted properly. Is the transceiver over-squelched?
   ※Check to see that the transceiver is switched to an operational mode.
3. If trouble is experienced with transmitting.
   ※Check to see that the coaxial cable is securely connected to the coaxial plug.
   ※Be sure that all coaxial cable connections are secure and free of corrosion.
   ※Be sure that you are fully pressing the push-to-talk switch on the microphones.

(NOTE : _____
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SCHEMATIC DIAGRAM





Bee-Ware Ltd.,

Ripon Way Harrogate
North Yorkshire
Telephone: 0423 501151
Telex: 57953 Adam G